

3.4.1 2 3.4.5

3.5.1 2 3.5.8

3.5.10

3.6.3

3.6.12

3.5.14

3.6.4

3.5.15

3.6.8

3.6.1

3.6.9

3.6.2

3.6.11

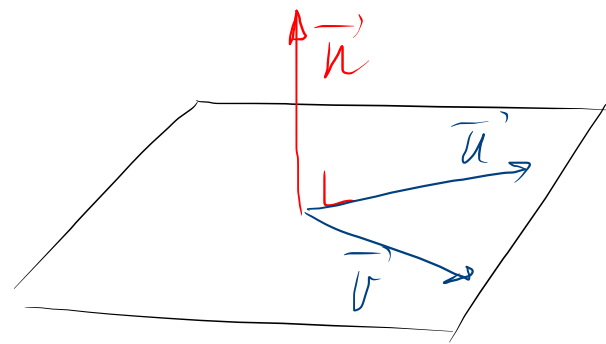
TE du  
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# Equation du plan

$$a, b, c, d \in \mathbb{R}$$

$$\pi: ax + by + cz + d = 0$$

$$\vec{n} = \begin{pmatrix} a \\ b \\ c \end{pmatrix} \text{ est normal à } \pi$$



$$\vec{n}' = \vec{u}' \times \vec{v}'$$

$i$	$u_1$	$v_1$
$j$	$u_2$	$v_2$
$k$	$u_3$	$v_3$

$$\rightarrow \begin{pmatrix} u_2 v_3 - u_3 v_2 \\ -(u_1 v_3 - u_3 v_1) \\ u_1 v_2 - u_2 v_1 \end{pmatrix}$$

$$\rightarrow i \begin{vmatrix} u_2 & v_2 \\ u_3 & v_3 \end{vmatrix} - j \begin{vmatrix} u_1 & v_1 \\ u_3 & v_3 \end{vmatrix} + k \begin{vmatrix} u_1 & v_1 \\ u_2 & v_2 \end{vmatrix}$$

$$i = \begin{pmatrix} 1 \\ 0 \\ 0 \end{pmatrix}$$

$$j = \begin{pmatrix} 0 \\ 1 \\ 0 \end{pmatrix} \text{ déterminant } k = \begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix}$$

$$e \begin{cases} x = -4 - 6u \\ y = 1 - 4u \\ z = -6 - 8u \end{cases}$$

$(-1, 3, -2) \in e \Rightarrow$  *on the line*

$$-1 = -4 - 6u \quad | \quad u = -\frac{1}{2}$$

$$3 = 1 - 4u \quad | \quad u = -\frac{1}{2}$$

$$-2 = -6 - 8u \quad | \quad u = -\frac{1}{2}$$

$$\vec{e} = \begin{pmatrix} -6 \\ -4 \\ -8 \end{pmatrix}$$

$$\vec{e} = -2 \cdot \vec{d}$$

$\Rightarrow \parallel$

$(-1, 3, -2) \in e$

$$\begin{pmatrix} -1 \\ 3 \\ -2 \end{pmatrix} \in d$$

x      y      z

$d$

$$x = -1 + 3k$$

$$y = 3 + 2k$$

$$z = -2 + 4k$$

$$\vec{d} = \begin{pmatrix} 3 \\ 2 \\ 4 \end{pmatrix}$$